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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/048,160	05/24/2002	Stephen Macauley	02:13	4371
2119	7590	10/10/2003	EXAMINER	
RONALD E. GREIGG GREIGG & GREIGG P.L.L.C. 1423 POWHATAN STREET, UNIT ONE ALEXANDRIA, VA 22314			SAYOC, EMMANUEL	
		ART UNIT		PAPER NUMBER
				3746

DATE MAILED: 10/10/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/048,160	MACAULEY ET AL.
	Examiner Emmanuel Sayoc	Art Unit 3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 25 August 2003.  
 2a) This action is FINAL.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 14-33 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 14 and 20 is/are rejected.  
 7) Claim(s) 15-19 and 21-33 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 24 May 2002 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 11) The proposed drawing correction filed on 8/25/2003 is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.  
 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) The translation of the foreign language provisional application has been received.  
 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	6) <input type="checkbox"/> Other: _____

## **DETAILED ACTION**

1. This office action is in response to the amendments of 8/25/2003. In making the below rejections and/or objections the examiner has considered and addressed each of the applicants arguments.

### ***Drawings***

2. The drawings are objected to because they are informal. New formal drawings are required upon allowance. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The applicant's proposal for Figure 10 is accepted.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 14, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Stucker et al. (U.S. 5,791,882).

With respect to claim 14, Stucker in Figures 1-10 disclose a high efficiency diaphragm pump. The pump comprises a casing with a front cover (29) and a back cover (27), and a diaphragm plate (Figure 5) extending across the covers and being secured there between when the covers are fastened together. The diaphragm plate contains a plurality of circular regions and

the front cover contains substantially axially aligned inlet (19) and outlet (21) ports, each leading to inlet (89) and outlet chambers (91) respectively. A valve housing (See Figure 2) is securable inside the front cover and is defined therein. A concave resilient outlet valve (93) and an outlet dished shaped valve seat (inherent but not shown in Figure 2) is housed within the valve housing. The outlet valve seat contains fluid passages (105, 85) there through. A plurality of inlet valve seats (See Figure 2) and inlet valves (87) equal in number to the number of circular regions each being similarly dished and having a corresponding concave resilient valve seated therein. Each inlet valve seat has fluid passages (83) there through. The outlet valve is in fluid communication with the outlet chamber and the inlet valve is in fluid communication with the inlet chamber. A wobble plate (49) is positioned in the back cover, and has a central boss (46,60) and a plurality of pistons (piston surfaces 64, Figure 5) equal in number to the number of circular regions on the diaphragm plate. The pistons and the circular regions a correspondingly secured together, and the wobble plate is subjected to nutating motion to cause reciprocating action by the circular regions to provide pumping action. The wobble plate seats and holds a bearing (36,45). The boss contains an inwardly-extending flange over the bearing (see Figure 2).

With respect to claim 20, the casing (27) is secured to an electric motor (13) with its drive shaft connected via an eccentric (47) to the bearing.

***Response to Amendment***

6. The objections to the drawings, outlined in the previous office action regarding omitted subject matter, are hereby withdrawn.
7. The objections to the specification are hereby withdrawn.

8. The objections to claim 14 are hereby withdrawn.

***Allowable Subject Matter***

9. Claims 15-19, 21, and 22-33 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

10. Applicant's arguments filed 8/25/2003 have been fully considered but they are not persuasive. The wobble plate (49) comprising the associated bushing (47) constitutes a central boss, which is adapted to seat and hold bearing assembly (45). The process of assembling the bearing to the wobble plate, "insert moulded" does not provide any patentable structural limitation in the apparatus claim and therefore is not given any weight. As shown in Figures 2 and 3, the bushing (47) contains radially extending flanges that extend over the bearing assembly (45). "Inwardly-extending" is a relative term based on an arbitrary reference frame. The extension of the bushing (47) constitutes as inward relative to the inner periphery of the pump housing.

***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are cited to further show the state of the art with respect to diaphragm pumps

U.S. Pat. 4,610,605 to Hartley.

E.P. Pat. 0,744,547 A2 to Schoenmeyr et al.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Contact Information***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Sayoc whose telephone number is (703) 305-0054. The examiner can normally be reached on M-F 8 A.M. - 6 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Thorpe can be reached on (703) 308-0102. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9302 for regular communications and (703) 872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.

  
Emmanuel Sayoc  
Patent Examiner  
Art Unit 3746

ECS  
October 9, 2003

  
JUSTINE R. YU  
PRIMARY EXAMINER

*10/9/03*